

## ABSTRACT

**Objective:** To study the effect of additional isotonic exercises of hip abductor to isotonic exercises of quadriceps femoris concerning of improved perceived of pain, increasing of quadriceps femoris strength and increasing of physical function for patient with knee osteoarthritis.

**Design:** Randomized pretest and posttest control group design.

**Setting:** Physical Medicine and Rehabilitation Laboratory and home exercise programme.

**Participants:** Twenty patients with knee osteoarthritis.

**Intervention:** The subjects were randomly assigned to the intervention group (isotonic exercise of quadriceps femoris plus isotonic exercise of hip abductor) or the control group (isotonic exercise of quadriceps femoris only). Both groups participated in a three-weeks exercise protocol.

**Main outcome measure:** Pain (VAS), strength of quadriceps femoris and physical function (WOMAC) were assessed before and after treatment. Parametric and non-parametric tests were used to compare the groups before and after treatment with  $\alpha=0.05$ .

**Results:** The intervention group improved perceived pain symptoms ( $p=0,004$ ) and decreased stiffness subscale ( $p=0,002$ ) and increased of physical function subscale ( $p=0,031$ ) of WOMAC. Although the quadriceps femoris strength were improved in both groups ( $p=0,0001$ ) and pain subscale of WOMAC were improved in both groups ( $p=0,0001$ ) but there was no statistically significant difference between groups.

**Conclusions:** Supplementation of isotonic exercise of hip abductor to isotonic exercise of quadriceps femoris provided additional benefits with respect to the perceived pain symptoms, decrease stiffness and increase the physical function of patients with knee osteoarthritis after three weeks of treatment.